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MARCH 1983 THE NAVAL AVIATION SAFETY REVIEW

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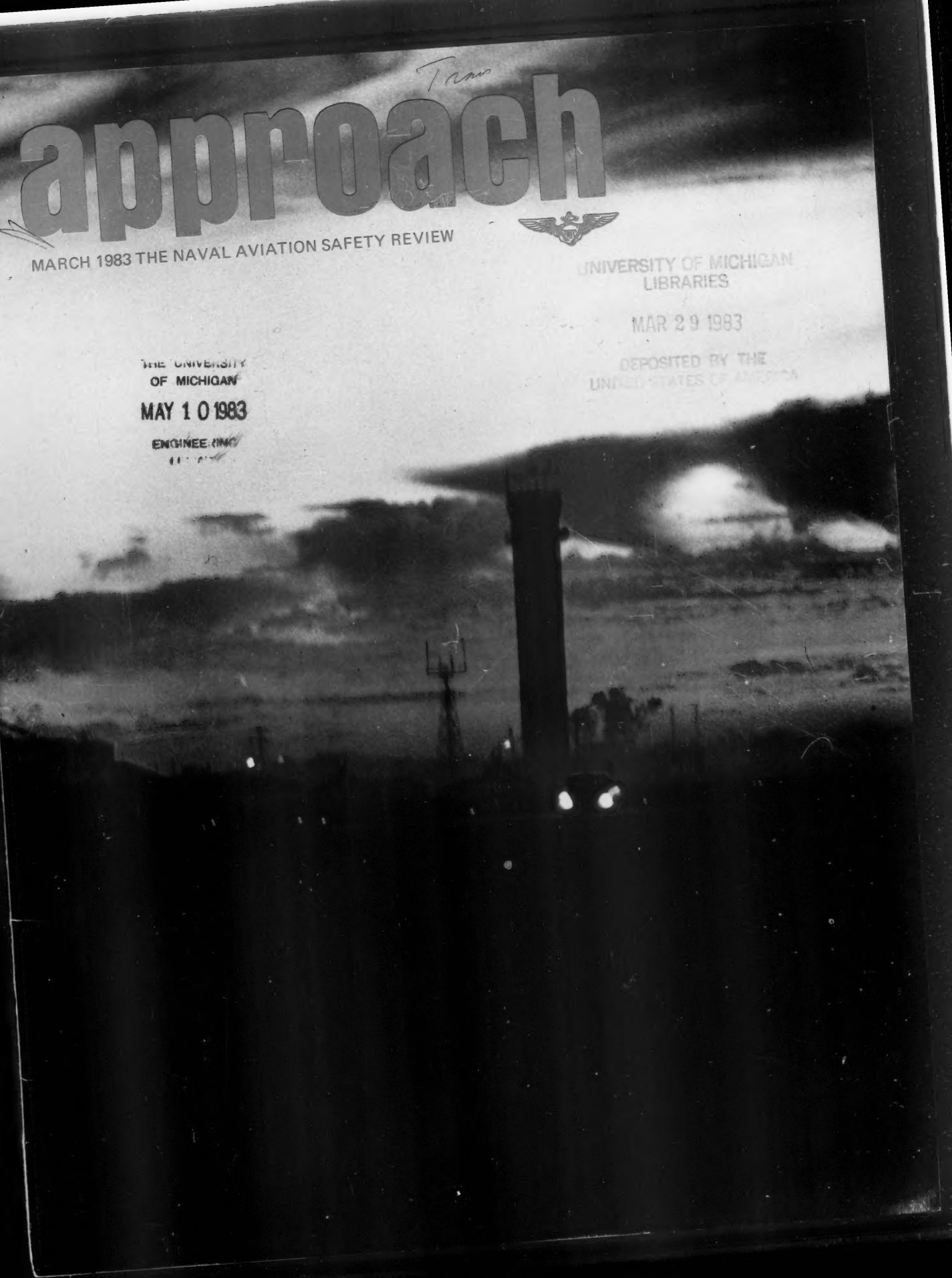

Call now for your survival "Mind Jogger"

DO you know how to assume the HELP position, the HUDDLE position? What about hypothermia? If necessary, could you construct an emergency shelter? How about surviving under arctic conditions?

The answers you need for these and similar questions are now available to aircrewmen in a flip chart booklet concerning *Sea Survival* and *Land Survival.* It's designed as a survivor's memory aid, concentrating on setting priorities and taking correct action in survival situations.

The booklet is published by the Naval Training Equipment Center, Orlando, FL and is the result of a concept originated by LCDR David Thomas, Royal Navy, a British exchange officer on duty at the Naval Safety Center. In his endorsement of the booklet, RADM T. C. Steele, Commander, Naval Safety Center, states:

"It is an established fact that individuals in a survival situation often suffer some degree of shock, being especially significant during the initial phase of the egress/survival episode. This is the time frame the flip chart is designed to address. It can serve as a 'mind jogger' until the downed crewmember begins to 'function' again. Even though all naval aviators receive periodic training in this area, this training aid could have significant impact in selected survival/rescue scenarios."

Consider some of the boldface headings under the "Sea Survival" section: Priorities, First Aid, Shelter, Location of Signaling Devices, Water, Food and Preparation for Helo Rescue. Most of these topics are repeated in "Land Survival" in addition to these boldfaced headings: Direction Finding and Supplementary Information — Arctic, Desert and Jungle.

To get your copy, call the Aviation Physiology Curriculum Management Office, Chief of Naval Education and Training, Pensacola, FL. Additional information is available from your local Aviation Physiology Training Unit.

Richard A. Eldridge

8-922-4387

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Several F-4 Phantoms dissolve above blue taxi lights as dusk catches up with this aerodrome. Photo by Capt Joe Doyle, USMC, HML 367.

The University of Michigan Transportation Library

Into the Island 2
By LT Michael C. Wade (formerly LT Michael Posthuma).
Zoom into the darkness with this ECMO-2 ejection story.
Risk and the Naval Aviator 10
By CDR Albert S. Polk III. If we're going to take risks, let's make them intelligent ones!
Night Tanking Midair 16
By Richard A. Eldridge. A constellation of lights ends up with a falling star.
Chain Lightning 22
By Russ Forbush. When will helicopter tiedown chains strike next?
Blind Date 28
By LT Colin W. Sargent. Night ASRs and some dangerous "VFR" razzle dazzle.
Air Breaks 6
Pressure Drop 8
By LCDR Barry Allen
Memories — Worth Their Weight in Life 13
By LCDR John Hilburn
Those Poor Devils 14
By Capt T. J. Gordon, USMC
"All Aircraft in the Whidbey Pattern . . ." 19
By CDR J. C. Erikson
Stung by the Stinger 20
By Russ Forbush
Bravo Zulu 26
Letters 32

Back cover by Robert C. Ferguson, Lockheed California Co.

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The seat went off with a loud bang, and I zoomed into the darkness.

INTO THE ISLAND

an NFO's eye view

By LT Michael C. Wade
(Formerly LT Michael Posthuma)

WINDY and choppy seas surrounded us as we walked on elevator No. 2, where our EA-6B *Prowler* was spotted for the 1800 go. The sun had just set, and I knew we were facing a black, moonless night. We were slated for a routine night ECM raid against the USS RICHMOND K. TURNER and a dark night would aid us in avoiding fighters. I was flying as ECMO 2 in the right rear seat of the aircraft. Our crew consisted of a nugget ECMO 1, experiencing one of his first Case III launches, an experienced pilot and me, a second-cruise Lieutenant.

We'd just returned to sea from a long Christmas standdown in Naples, Italy, and this was our first night flight in more than three weeks. Our brief was thorough, and we, as a crew, had elected **not** to wear our wet suits because the air/water temperature was one degree above NATOPS minimums.

Preflight in the gathering darkness was normal. I checked the top of the aircraft, the ECM pods and then strapped in. The engines were started, checklists performed and radio checks completed expediently. While we waited for taxi directions, I noticed that the ship was now rolling and pitching quite heavily and thought to myself that it would be a hell of a night to punch out. Our turn came, and we armed our seats and taxied in line for catapult No. 1. By now the darkness was complete.

Sitting behind the catapult, something came over me and I began to prepare more meticulously than usual for the coming shot. I'd never been unprepared, but I'd become a bit careless. Tonight I arranged my LPA perfectly and positioned my toggles where I could find them quickly. I adjusted my ejection seat, positioned my arms and legs and gave my lapbelts and torso harness an extra tug for snugness. Finally I located the lower ejection handle and locked my harness.

The whoop of an S-3A careening off the cat ahead of us and the bang of the piston hitting the water brake signaled our turn. We taxied forward onto the cat and went into tension. I heard the engines spool up to full power, our ECMO 1 finished the takeoff checklist and the pilot signaled for launch. I braced for the acceleration, but we delayed momentarily while the cat officer waited for the bow to come up in the swells. I felt a bump and momentarily felt acceleration, but as suddenly as it started, the G-forces slacked and we were moving down the catapult track far too slowly for takeoff. My first reaction was disbelief — that I was really having a nightmare. But I came to my senses quickly and realized that the cat had somehow failed and was probably pulling us slowly off the bow.

The rear seat of the EA-6B contains only one instrument, an altimeter, and allows no forward vision. I looked to the right and left and saw only blackness. The aircraft was still moving forward at full power, though, and I figured we had three or four seconds before the bow. I heard the pilot say *get ready* over the ICS, and without hesitation, I pulled my lower ejection handle when four seconds had passed.

The seat went off with a loud bang, and I zoomed into the darkness. During the ascent, I instinctively began performing IRK (Inflate-Release-Koch), my low-altitude version of IRSOK. I remember feeling my LPA inflate as I neared the silent apex of the ejection arc and then the comforting bang of the chute snapping open in the wind. Hanging in my chute, I turned around and found myself 200 feet above the bow, facing the ship and a flight deck crowded with airplanes. Things began to happen quickly as my chute, buoyed by a 50-knot wind, accelerated me into the island. I dropped my raft and braced for a collision with the superstructure. I saw the yellow deck lights close with a blur just before I felt

BReder

Things began to happen quickly as my chute, buoyed by a 50-knot wind, accelerated me into the island. I dropped my raft and braced for a collision with the superstructure. I saw the yellow deck lights close with a blur...

the sharp jerk of my canopy snagging something above, twisting me around and slamming me into a steel bulkhead. I hung briefly, the wind knocked out of me, then dropped like a stone.

Because it was black below, I knew I was over the water, so I released my chute, crossed my legs, folded my arms tightly over my chest and straightened my body so I'd hopefully hit either feet first or head first. I was concerned about getting knocked out, bursting my LPA or breaking a limb. I entered the water feet first, almost vertically, and in spite of my LPA I stayed under for several seconds. Those moments under that cold black water were chilling to the marrow, and every molecule in my body strained to get me to the surface. When I broke the surface, my raft was floating a foot away and my chute was gone. (Later I learned that I'd collided with the aux conn of the navigation bridge and fallen 100 feet to the water.) I was heartened when I realized I'd ejected safely, survived both a collision with the ship and a 100-foot fall and was now floating with a good LPA/raft, clear of my chute and four feet from steel. I thought I had it licked and would be back in the readyroom in a few minutes with a great sea story. So I began to let down. **That was a mistake.** Fifteen seconds had passed since the catapult had failed.

I swam away from the ship, mindful of the screws and turbulence. When I'd moved far enough away, I attempted to enter my raft but neglected to use the proper technique and tried to pull myself onto the raft without first attaining the proper body position. Finally, after several unsuccessful attempts, I used the proper technique. Again I was thwarted, because I hadn't removed my butt plate. (I'd left it on because I couldn't remember where the retaining lanyard was and was afraid of losing the raft.) I disconnected the butt plate and managed to enter the raft but was constantly turned out since the sea was so rough and the wind was so high. The effort of getting into the raft was tiring, and after about four or five attempts, I was exhausted. Next, my oxygen mask went slack on my face, indicating the bail-out bottle was empty. I discarded my mask and let go of my raft because the sound of an approaching helicopter indicated that my rescue was immiment.

I turned my attention to signaling the helicopter and tried to open my vest and get out my strobe. I had difficulty locating the tab in the darkness, and because I was becoming extremely agitated, I attempted to rip it open with brute force. The ship had disappeared behind the waves, and I was cut off in the towering seas. Without the oxygen mask, I was having trouble breathing in the waves and spray and I was frightened and beginning to panic. My water survival training and discipline came through, however, and I calmed myself, then methodically located my equipment in the darkness. I found my strobe and placed it on my helmet, fetched a day/night flare and set off the night end. By now I could see the helicopter working his way upwind, and my hopes soared. Six minutes had passed.

The helicopter hovered around me for some time without stabilizing, and it was obvious that he was having extreme difficulty maintaining a hover in the 15-foot seas and 50-knot winds (he also had a malfunctioning doppler). For about 15 minutes, he drifted around me erratically. At one point I glimpsed a SAR swimmer arc through the air at the end of the rescue hoist and disappear into a wave. I never saw him again, but he did manage to return safely to his helicopter, stripped of his mask and flippers. Seeing his difficulty, I feared that the water was too rough for the helicopter to effect my rescue. The helicopter began to fly upwind, then drift back, trolling the harness near me. On the third attempt, I saw it about six feet away and managed to lunge out and grab it. Unfortunately, the helicopter couldn't see that I had hold of the harness and continued to circle. I was dragged for several seconds, still clinging desperately to the horse collar with my numb fingers. Finally, during a brief pause in movement, I scrambled to the top of the collar and snapped my "D" ring in. I was now going wherever that helicopter went, but the helicopter continued to fly about, searching for me, and I was dragged helplessly behind. This nightmare continued for about a minute, and all the time I was struggling for air and concerned that I might be rendered unconscious by the beating I was taking. Suddenly the cable went very slack as the helicopter reversed course. Frantically I signaled that I was hooked up, but there was no response, and the helicopter began to move away rapidly, taking up the slack. Soon the cable snapped taught, jerking me out of the water to my knees, at which point my "D" ring mercifully failed and I fell back into the water, dazed and struggling against a wave of blackness. I knew if I blacked out for even a few moments that I would drown.

My head cleared slowly, and I realized I was alone and concluded that it had been deemed too risky to attempt further rescue. I'd been in cold water for 30 minutes now without a wet suit, and I was feeling signs of hypothermia. I couldn't maintain the huddle to conserve body heat, because I needed my limbs to swim and balance myself in the high seas. The balance was needed to control my breathing between the spray and the waves breaking over my head. I

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I fell back into the water, dazed and struggling against a wave of blackness. I knew if I blacked out for even a few moments that I would drown.

was further demoralized when I found that the violent jerk of the harness had ripped my radio loose and I couldn't even talk to another human being. My hands and lips were numb, my strength was waning and I slipped to the lowest point of my life. My realization that death was near was depressing me, and the isolation was sapping my will to live. I could only see ships and lights occasionally as I crested a wave. I was dying alone in a blackness pierced only by the strobe light marking my position in the night.

After 5 or 10 minutes of solitude, I heard the comforting sound of an approaching helicopter and came out of my depression. I took steps to beacon my position and popped more night flares. The helicopter soon saw me and hit me with a searchlight from about 60 yards downwind. With the Aldis lamp on me, I popped two of the day-end flares to aid the pilot in determining the wind and watched the pilot creep up slowly until he was 15 yards away. There he lowered a SAR swimmer part-way down so the swimmer could signal my position to the hoist crewman, who relayed it to him. This was very successful, and soon the helicopter harness was within 15 feet of me. At this point, the swimmer leaped off the harness and swam over to me and my spirits soared.

The SAR crewman asked my condition, checked me for injuries and then started towing me back to the harness, which was drifting away. We weren't making progress toward the drifting harness, but the hoist crewman above was alert to this, so he ran out all of the cable to stabilize the horse collar in the water. We reached the harness, and both of us grabbed it and were towed a few feet before it stopped. In an instant, I crawled into the collar, the swimmer snapped us in and we were hoisted into the helicopter. We returned to the ship, and I was treated for exposure and a gash in my arm. **I'd been in the water for 45 minutes!**

Words cannot describe the joy of crawling into the helicopter that night, nor can they accurately assess the courage of the SAR swimmer and the skill of the pilots and crewmen. That night, both of those helicopter crews risked their lives to save mine.

Preparation for this type of mishap is the most valuable tip I can pass on. Ninety percent of what saved my life that night were things I'd done before I ever strapped into that airplane. A decision I made almost killed me, however, and that was the decision not to wear my wet suit. This was based on the preflight OAT of 31° F windchill. We knew it would probably get colder but chose to ignore it. None of us enjoy wearing those wet suits, but if I'd been wearing mine, I might have lasted all night.

My ability as a swimmer was crucial to my survival. Not only had I completed DWEST four times in my career, but I'd served as a water survival instructor at NAS Pensacola for six months before attending flight school and was a certified Red Cross swimming instructor. The result: I was more confident in the extreme water conditions and could balance and control my breathing.

Other factors which helped me: I carried extra flares instead of a dye marker and shark repellent. My helmet was decorated with bright yellow reflective tape, and the helicopter pilot and crewman said this was the **most important thing** that aided them in finding me among the many lights that were in my vicinity. The helicopter pilots said they could even see the yellow reflection through the waves and spray! I was familiar with the location of the equipment in my vest because I'd accomplished a blindfold drill only 24 hours prior. Even so, more practice would have helped. **I'd drilled myself relentlessly about IRSOK and was able to perform it without thinking!** I'd made the decision to eject in the readyroom months before. You must decide what your ejection parameters are while you have the luxury of debating the alternatives. Each of these things was crucial to my survival. In short, start preparing yourself RIGHT NOW — you can't do enough!

Finally, I'll comment on my water release technique. An article concerning this was printed in *APPROACH* recently (March 1982, "A Lesson Worth Learning") in which the author commented that he'd survived because he'd shed his parachute prior to water entry and hadn't suffered any ill effects from the 8- to 12-foot fall. I agree with him. I fell 100 feet and suffered only minor injuries, and I'm convinced that had I entered those heavy seas with my chute still attached, I'd have perished. I don't advocate 100-foot leaps, however, but advise crewmen to eyeball the flight deck and judge above-water release from that. I can't seriously envision any harm from even a 50-foot fall, and the alternative, drowning, is not attractive. I further qualify this by recommending early release only in circumstances where the survivor can clearly see and use the flight deck as a reference. Think about it.

The other two crewmembers elected not to eject. Miraculously, they were able to stop the Prowler with only a few feet left on the port bow. Regarding early Koch release, on 20 January 1983, the Naval Aviation Schools Command asked the Chief of Naval Operations for the authority to perform low level parachute divestment testing. These tests are designed to validate and standardize procedures as well as demonstrate how best to instruct such procedures. NAVAVSCOLSCOM 201443Z JAN 83 refers. —Ed.

Training Command Flying Pros. Recently, CNATRA named a couple of its instructors "Flying Pros" for the aviating skills they demonstrated in the two separate aircraft incidents described below:

During a detachment to NAF El Centro, VT-23's 1stLt Bill Dorn and his student, 2ndLt Dave Riegel, were practicing touch-and-go landings in their T-2. On the rollout to a full-stop landing, 2ndLt Riegel suddenly noticed something strange about the starboard brake. The instructor pilot (IP) tested the brakes in the rear cockpit and noted the starboard brake had good pedal feel but no braking action. Realizing there was rough terrain at the end of the runway, 1stLt Dorn decided to ground-loop the aircraft to the left on the hard-packed shoulder adjacent to the runway. Skillfully applying the one good brake, the IP aimed the T-2 away from the runway lights and shut down both engines before departing the runway surface. He brought the aircraft to a full stop after a 270-degree turn off the runway. The investigation revealed that all three brake pucks from the right wheel had departed the wheel and were found strewn about 1,500 feet from the departure end of the runway. Through his quick thinking and skillful maneuvering, 1stLt Dorn saved the T-2 from serious damage and the pilots from any injury.

During a night primary training flight, VT-27's ENS Chuck Riley and his student, ENS John Gombar, experienced a rough-running engine while executing a simulated instrument approach in their T-28 *Trojan*. The IP immediately took control of the aircraft and configured it for a precautionary emergency landing. Shortly thereafter, brilliant orange flames were observed coming over the upper forward section of the nose cowling. The IP then declared an emergency and received vectors from approach control to a suitable civilian airport nearby. In a moment of cool judgment, ENS Riley elected to allow the engine to run, which enabled the T-28 to reach a point overhead the airport. The engine failed on the way to high key. Maneuvering his aircraft through the emergency landing profile, ENS Riley guided his *Trojan* to a safe "deadstick" landing. Superb airmanship and calm professionalism enabled two aviators and a valuable aircraft to "fly another day."

In addition to the Flying Pro citations awarded by CNATRA, *APPROACH* extends Attaboys to these professional aviators for jobs well done.

People Who Live in Glass Houses. A recent TYCOM message to his troops homes in on a problem that is fairly common in naval aviation — pointing our fingers at the other guys when our halos aren't exactly on straight — the old "We may not always be right but we're never wrong" bit. Here's the message.

Several months ago, throughout this command, discussions centered around the perceived inefficiency of the Navy's RAMEC system. Dissatisfaction over the speed with which action was taken by higher authority on submitted changes seemed to be the main gripe. Walking the cat back indicated the concern was valid in certain areas. Additionally, some TYCOM community logjams were uncovered. In short, the emphasis and concern expressed by you operators hopefully revitalized the system at all levels. Or so I thought.

"Recently, it was brought to my attention that we are apparently talking out of both sides of our mouths. In the wake of a fatal mishap, the AMB and endorsers all agreed that a certain fix was needed on an ejection system. The fix would preclude a recurrence of this type mishap. With assistance at all levels, an urgent accelerated action (personnel safety) technical directive was issued in late CY 81 for compliance not later than the next phase inspection by O-level maintenance. Not kit-oriented, the modification only required common stock hard-

AIR BREAKS

ware and a minimum amount of manhours for installation.

"A recent review (one year later) shows that only 15 percent of the aircraft involved have been modified. The most common excuse for noncompliance has been nonreceipt of material. I find this baffling, especially when no requests have been received by this command for supply assistance in procuring the needed material. Was it really that difficult to get the parts? Did we really follow up on the supply requests, or did we fall on our swords? Maybe we should put our own house in order before we bad-mouth the system. It appears the old adage of 'People who live in glass houses . . .' is appropriate here. Question: Are we all doing our best to make the system work? Check it out."

The Wrong Tack. An F-4 pilot was flying wing while giving his lead an instrument check.

Immediately after takeoff, the *Phantom* wingman scanned his engine instruments and fuel gauge. Everything seemed OK, and centerline fuel was transferring normally.

Once at altitude, the flight was encountering IMC when the wingman's RIO got a glimpse of his own exhaust and thought it looked funny. He asked his pilot to check the engine instruments — all read normal.

Next, the fliers in the lead F-4 were asked to take a look, but they could see nothing unusual about the wingman's aircraft.

The flight was 85 miles out on the Homeplate 210 radial at 34,000 feet when the wingman pilot noticed a drastic reduction in his fuel quantity. He turned immediately toward Homeplate. During the turn the flight leader saw vapor coming from the underside of the wingman's F-4. The wing aircrew reviewed emergency procedures while declaring an emergency with Homeplate Approach Control.

En route, the aircrew depressurized the fuel system but it didn't appear to slow the fuel loss.

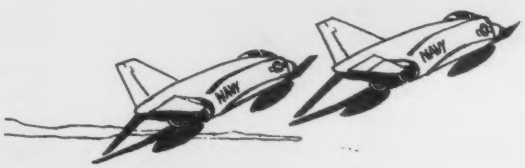
The wingman made a straight-in landing at Homeplate. After clearing the runway, both engines were shut down. Fuel was streaming steadily from the bottom of the F-4 and running out of the engine intakes. The crash crew cooled down the engines and flushed the fuel from the aircraft with water. Read on and find out how this near disaster came about.

Three days prior (a Friday), the *Phantom* had been undergoing maintenance for a fuel gauge discrepancy. While performing this work, the work crew removed the fuel probe from the top of the No. 2 fuel cell. Maintenance was not completed on the fuel gauge discrepancy that day. In order to move the aircraft out of the hangar, the fuel probe was placed back into the fuel cell but not secured, and the inspection panel was tacked down. No information concerning the maintenance performed was recorded in either the shop or passdown logs in Maintenance Control.

On the following Sunday, unaware that the No. 2 fuel probe was unsecured, the night check crew finished work on the fuel gauge discrepancy. The maintenance action performed by the night crew did not require opening the inspection panel and checking for security of the No. 2 fuel probe. The work was signed off by the work crew and the collateral duty inspector (CDI), who was also unaware that the fuel probe was unsecured. The CDI noticed the tacked down inspection panel and merely secured it. Once the aircraft was airborne, the fuel cell pressurized, forcing the probe up and leading to the massive fuel leak.

There are a couple of important factors associated with this incident: Too often, when maintenance is not completed by one work crew and the work is later assigned to another crew, there's a lack of communication between them. In this case, there was a communication breakdown between individuals, shops and Maintenance Control. Failure to go by the book (OPNAVINST 4790.2B) led to a series of events that nearly ended in disaster for an aircrew and aircraft.

Supervisory errors cannot be tolerated. Shop supervisors must be aware of all work accomplished on an aircraft. Maintenance Control must also be aware of what's been done and what needs to be done. Once the work has been completed, CDI s must thoroughly inspect any areas where work has been performed. Anything less is courting a catastrophic mishap. ◄



Things were going downhill. I wasn't feeling any positive pressure through my mask...

PRESSURE DROP

By LCDR Barry Allen
VAW-121

INSTRUMENT meteorological conditions. The clouds extended from nonprecision minimums to well above our cruising altitude of FL 290. Heading west in our E-2 *Hawkeye*, we found ourselves bucking some headwinds. We'd logged over four hours on the first leg of our stopover, and we were expecting to exceed that during this final leg to the West Coast.

Typically, we had an autopilot that an ingenious (or terribly bored) AE must have preprogrammed for a barrel roll, so it meant another few hours of fighting the dutch roll.

Additionally, the transition from subfreezing temperatures at altitude on the first leg to above freezing on the deck at Midwest AFB caused a lot of condensation within the aircraft. The quick turnaround and launch back into the subfreezing temperatures with a soaking wet interior began to cause some problems. (Because *Hawkeyes* are pressurized through the bleed air system, the cabin pressure remains constant at 5,000 feet by relieving the excess pressure through the cabin pressure regulator valve. Since this now-warm moist air contacts the subfreezing exterior surface, a fine layer of frost forms. This in itself is not critical, but the gradual buildup causes an unseating effect on the pressure regulator, resulting in a gradual loss of cabin pressure. This isn't new to the E-2 community, and numerous "fixes" help to maintain the cabin pressure at least below 10,000 feet.)

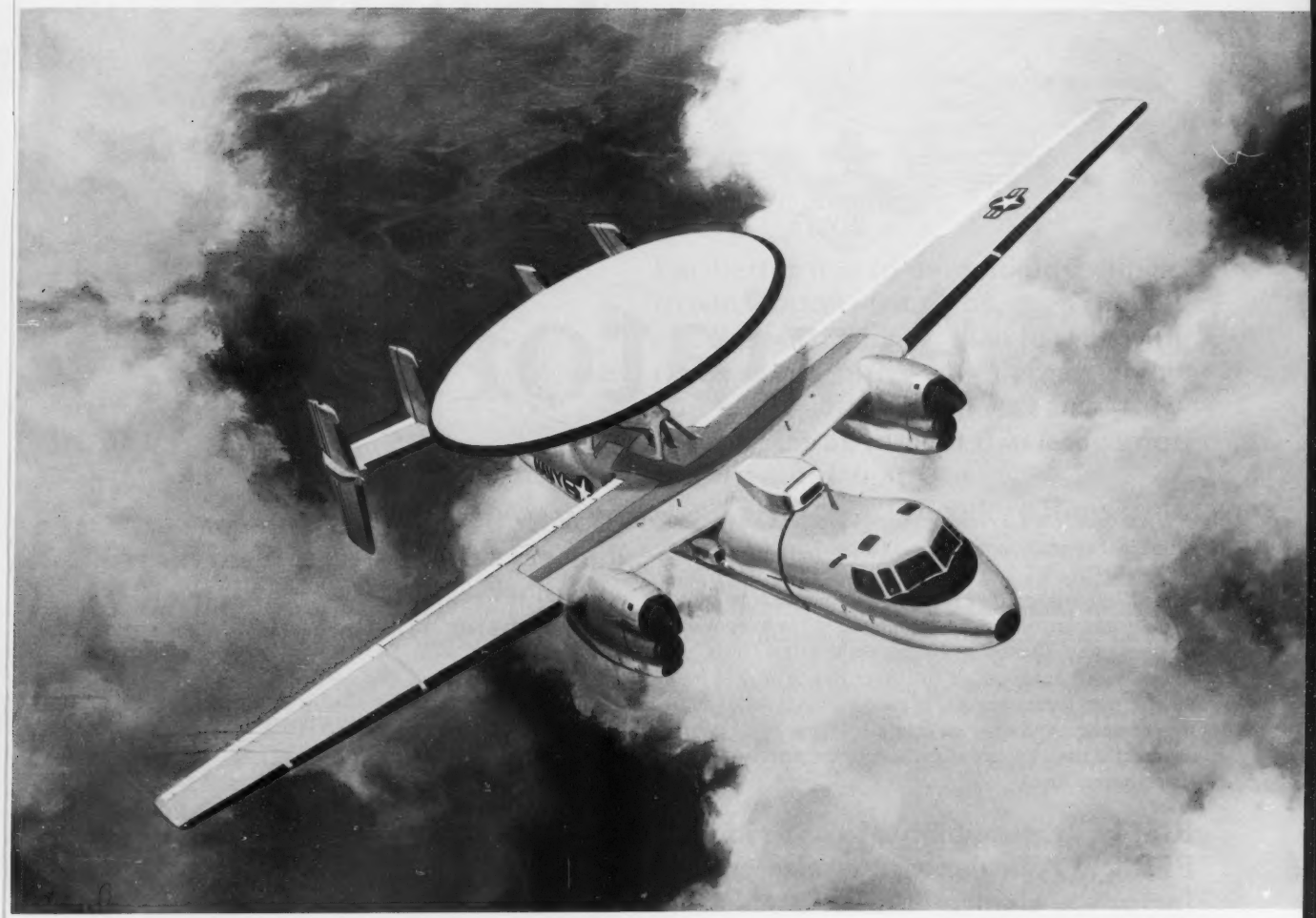
On this particular occasion, however, the "fix" didn't work and the cabin pressure was slowly creeping up to match the flight altitude. With the cabin pressure irrevocably rising above 12,000 feet, I ordered everyone on oxygen. As everyone checked in with masks on, cabin pressure had peaked to 29,000 feet and my nugget in the left seat reported that he was having problems breathing.

Since we don't normally wear our masks, I asked him to doublecheck his connections and regulator settings. I also guessed that he was simply having problems adapting to the mask. The regulator was properly set up, and he was getting the corresponding blinking from the flow indicator. By now, I realized I wasn't feeling as well as I should, but before I could react, my copilot collapsed over the yoke. I was becoming very lightheaded but managed to pull him back upright into his seat and put my regulator on emergency. Things were going downhill. I wasn't feeling any positive pressure through my mask.

Carefully controlling my breathing, I declared an emergency and started a descent. Being in IMC with no autopilot and hanging onto a thread of consciousness, I didn't dare perform an emergency descent with a rate of descent in excess of 6,000 fpm. Trying to focus on the instruments, I nosed over to about 2,500 fpm. With my hands full of aircraft, I couldn't reach my oxygen regulator to put the copilot on emergency or plug either of us into the emergency system. There was nothing more I could do but hang on.

Upon hearing of our predicament, our quick-thinking CICO (whose oxygen system was working fine) brought the walkaround oxygen bottle that's used for a crewmember fighting a fire. He plugged in the left-seat pilot, and almost instantaneously, the nugget revived but was disoriented.

Before I could react, my copilot collapsed over the yoke.



Grumman Aircraft/Craig Kavafes

Descending through 16,000 feet, the cabin pressure started to improve and I was able to breath easier, though I was still lightheaded. We continued the flight to home base at a lower altitude.

Though this inflight episode makes for hairy reading, the final analysis of the cause highlights the issue. Both pilots performed the normal oxygen system preflight checks, but other than through hyperventilation, it's difficult to experience hypoxia at sea level. The maintenance check of the aircraft revealed the oxygen system to be in good working order, but my oxygen regulator, though indicating *normal flow*, was faulty. My copilot's oxygen regulator was operating normally, but the hose connection under the side panel that runs from the regulator to the attachment of the flexible hose in the cockpit had come apart.

This area is not available for preflight inspection. We think that the oxygen flow into this nonairtight compartment was at least giving me a partial dilution of oxygen, which helped keep me conscious. Being a nonsmoker also contributed to my being able to report this incident.

A lot of Monday-morning quarterbacking can be done with this incident, but from our physiological training we know that a lack of oxygen quickly impairs reasonable thinking. The chances of a dual failure of this type are very remote, but then that's the kind of mishap report the investigators scratch their head about and chalk up as "undetermined." It all comes down to this: No matter what aircraft you're flying, be prepared for the unknown by continually sharpening your systems knowledge and teamwork. ◄

Risk and the Naval Aviator

By CDR Albert S. Polk III
VAW-115

WAY back in VT-1, students used to spend a lot of time sitting in their readyrooms learning procedures and reading *APPROACH*. VT-1 is no longer there, but the sitting around, learning and *APPROACH* are. Incidents described in the magazine often lead to interesting readyroom discussions. Any discussion will highlight a few "facts" — things we all agree on all the time. But there will be a never-ending succession of gray areas — things that some of the people agree on all of the time, all of the people agree on some of the time, but not all of the people agree on all of the time. (Sorry, Abe.)

RISK n: . . . possibility of loss or injury: PERIL . . . a dangerous element or factor . . . chance of loss . . . also the degree of probability of such loss . . .
Webster's New World Dictionary

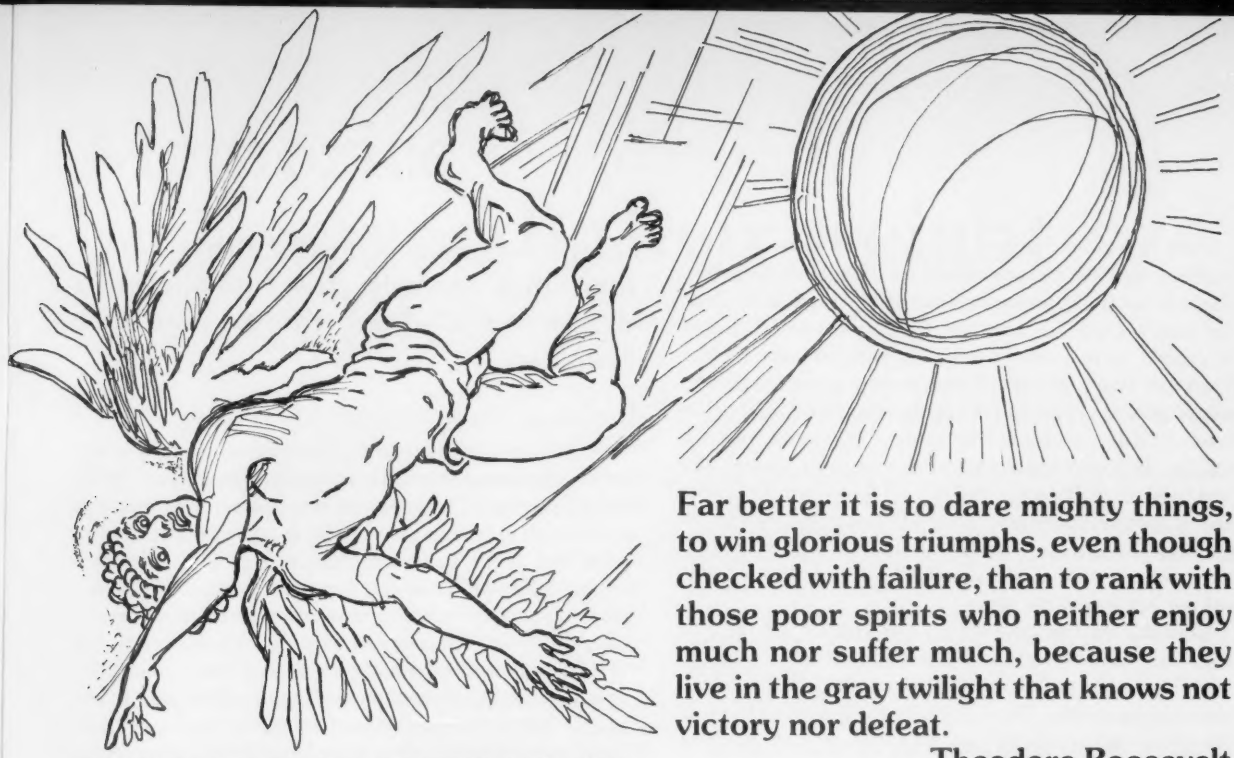
Perhaps the most shocking and therefore most memorable discussions in VT-1 concerned *APPROACH* articles depicting *downright stupid things* pilots did. As flight students, we (generally) knew right from wrong. Students knew all aviators were smart — real smart. Not just smart, but also well educated and extremely safety-conscious. So why did these articles show our heroes doing such *stupid things*? There were some real whoppers! The only conclusion we could draw was that these must be the bottom 10 percent or so that we'd always heard about — generally those associated with a poster being passed around at the time of an A-4 about to crash inverted. We were glad we didn't do stupid things then and would never do stupid things in the future.

RISK vt: . . . to expose the hazard or danger (. . . his life) . . . to incur the risk or danger . . . (. . . breaking his neck) . . .
Webster's New World Dictionary

It was readily apparent to all of us (except the 10 percent) at that stage of our flying that NATOPS, referred to as "the Bible," *was* the Bible. It was blessed by our creator. Unless we wanted to meet Him face to face on our next flight, everything had to be done in accordance with NATOPS. About a thousand flight hours later, NATOPS writers became less immortal. (They were us.) NATOPS was still the savior it had always been. "NATOPS — words to live by." Even the 10 percent will not dispute this. There were, and are, other rules, standard procedures and common sense policies which should, or "shall" be followed. But for some reason or reasons, some actions occur that do not make sense, are irrational and appear downright stupid to the casual observer.

That is a situation with which I shall not up with put."
Winston Churchill

So why, oh why do our heroes, even now, often *even aviators we know*, do such things? Why do they take risks? Risks are dumb in an aircraft. The dictionary says nothing good or smart or redeeming about risks. "Hazard . . . danger" — we don't need these in our airplanes! Good grief, flying is risky enough as it is without adding all those extra



stupid things. And some of us do it over the middle of the ocean and from aircraft carriers.

If God had wanted man to fly, He would have given him wings.

Wait. What was that? "Flying is risky?" But why am I . . .? Whoops. Am *I*, a naval aviator, taking a risk? Not long ago, my wife was confronted by the following statement upon being introduced to a nonaviator's wife: "Your husband is a pilot? And he isn't dead yet?!"

There are old pilots, and there are bold pilots, but there are no old, bold pilots.

We do have what many would consider a risky, hazardous or even dangerous occupation. This is always pointed out by our insurance agents.

Flying is not inherently dangerous, but it is extremely unforgiving of human error.

In fact, only we naval aviators will ever know what we do, what our motivations are and what we'll do to ensure our lives and livelihoods and those of our countrymen. Only we will know that exhilarating thrill of victory and that often even more exhilarating agony of defeat.

Far better it is to dare mighty things, to win glorious triumphs, even though checked with failure, than to rank with those poor spirits who neither enjoy much nor suffer much, because they live in the gray twilight that knows not victory nor defeat.

Theodore Roosevelt

Admit it: Naval aviators are in a risky business. The degree of risk that we'll impose on ourselves and others is the topic under discussion. Assuming the average pilot is able to identify and weigh the factors involved in risk taking, how does he choose? What about the unknown? What are the individual's limits? And the big unknown that every CO strives to answer before he gives a pilot the keys: How far will he go? So ask yourself: How far will I go? What is my margin of safety, and how do I define safety?

Behold the turtle: he only makes progress when he sticks his neck out.

It is now approximately five years since CAPT Dana French (a "shoe") fathered Leadership Management Education and Training (LMET). Many pilots have had the valuable risk training which is a small part of that course. In flight training, aviators learn about the limits of their aircraft and their bodies. All students practice and are pressed to experience these limits. Pressing to the max may be risk-taking training. Very little training exists in the area of risk, but it's a daily facet of our business of flying airplanes. Aviators must strive to get the most from the OJT available.

Risks can lead to large payoffs. Conversely, they can also lead to severe losses.

Continued

In the heat of the moment, many risks are taken. After the pressing need has disappeared, these often look incredibly stupid in hindsight. Some look incredibly stupid at the time and need not wait for hindsight. Operational necessity may be valid — as in a carrier TransPac with no night current pilots and Bears inbound. The captain is going to take the risk of launching you into the night. Once that initial risk is taken, he'll do everything in his power to minimize your risk and his. He'll provide a ready deck and ready tanker. The best final controller and the CAG LSO will provide tender loving care on glideslope. Your CO has already given his assurance that you can handle the situation or you wouldn't have been on alert. The risk will be taken. Is this a "safe" risk, or is it incredibly stupid?

Consider the bombing derby. The aviators are there to win. They have both the will to win and the will to work to win. They may not have the skill to win without taking above average risks. They may have the discipline to avoid the extra risks, knowing they may lose, or they may risk everything for the bull. What is it worth to you and to your squadron to win? What are the consequences if you lose? What if you lose everything — forever? In such a case, it may be better to lose the battle and win the war.

The intangible reward is a very popular risk inducer. Intangibles include peer pressure and loyalty. Both of these interreact with and reinforce other variables. Unfortunately, they tend to support the uncertainties that intelligent naval officers, left on their own, would often reject. Risks are taken based upon the uncertainty that others will appreciate the risk. Aviators must carefully weigh the possible payoff against the incredibly stupid reputation awarded by peers and the CO's writeup which does *not* refer to "the best pilot in the squadron."

Often multiple inputs are ignored, overlooked — or just not known. The risk is masked. An elevator has been stiff or "strange" for months. The first writeup indicated slight stiffness. The next said *possibly* full throw did not *appear* available with full down trim. Lots of maintenance checks have uncovered no problems. Tomorrow is the flyoff. The pilot is skeptical, but is assured by his roommate (the maintenance officer) that they're worn bushings, but they're OK for now, not available on the ship and will be replaced next week. What are the risks? Consequences? Payoffs? How will the pilot look flying into the break at home field? How will he look watching the flyoff from Primary? How will he look floating under his parachute a mile ahead of the ship? Whatever the result, how will he look when he finds out that the proper test equipment had not been available on the ship, but when checked properly (assuming the aircraft is still available), the controls were found misaligned and the aircraft should have been hard down? Will he look incredibly stupid?

It isn't so much ignorance that gets a man into trouble. It's knowing too damn much about things that just aren't so.

In the same flyoff situation described above, a prudent pilot could educate himself to properly assess the risk. While the aircraft could look hard down, proper prior planning could result in lessening the risk for a successful sortie. A few years ago, a P-3 was successfully ferried with only three engines installed. At the mention of such a feat, this sounds incredibly stupid. After the mission was over, it was praised as a carefully planned and executed achievement. The Wright brothers were thorough planners. The crew of NC-4 applied considerable skill in crossing the Atlantic. "Lucky Lindy" had a lot more than luck going for him. Flight planning for Alan Shepard, John Glenn and Neil Armstrong began long before Jules Verne wrote about men going to the moon. There's no doubt that the first time such flights were seriously mentioned, their perpetrators looked incredibly stupid to many. But not any more.

Consider the consequences of not taking risks. Without risks, there would be no ACM, no night carrier landings, (maybe no carriers!), no Blue Angels and virtually no flying.

One small step for man; One giant leap for mankind.

Neil Armstrong

There is a great need for risk taking and risk takers. Risk is vital to the business of naval aviation. It's woven into all aspects of the profession. It's part of being a professional.

Naval aviators should be risk takers — informed, intelligent, rational risk takers. They should study themselves, their aircraft, NATOPS, tactics and SOP, then learn from the experiences of others as well as themselves. When a risk presents itself, the professional naval aviator should examine the risk carefully to avoid the casual "not me!" or "sure, I'll do it." Properly executed risk taking increases mission effectiveness while reducing damage, injury and waste of assets.

It *is* possible to take risks without doing stupid things.

A ship in a harbor is safe, but that's not what ships are built for.

Shedd

Memories — worth their weight in life

By LCDR John Hilburn
VF-102

HOW did we do this? Watching the turn needle, I was thinking *a fast rate of roll will cause rapid overshoot to the other side because of turn needle lag. Don't fixate! Rate of descent is increasing and the altimeter is approaching 800 feet!*

I never thought I'd find myself using the needle-ball, partial-panel instrument scan we were forced to practice in the Training Command. After all, weren't modern tactical aircraft equipped with a variety of backup attitude-indicating devices? But there we were, descending toward 800 feet in the clag with angle of bank and nose attitude unknown, a sink rate of 1,000 feet per minute and all three gyro attitude indicators in the two cockpits of our F-4J spinning crazily.

It all started back on deck before launch, when the weather information we heard on ATIS prompted us to switch to METRO for a quick check of the most promising alternates. The forecast for homeplate conjured up images of the familiar backed-up gaggle of aircraft vying for the attention of harried controllers. "Better leave the op area with a couple thousand extra," we thought. "Jeez — that was a crazy gyration the gyro went through switching from primary to standby; we'd better look at it again.

"Same thing.

"Hell, they both work after the switch. Call for taxi."

An hour later, we were checking in with Approach. Although we had the usual competition for controller attention, we encountered no significant delays.

"DIAMONDBACK 107, turn right heading 330, base leg, dirty up."

Gear, flaps, hook, armament, harness to go, looking good.

"Turn left, 290."

There it is, 290, roll out. Damn, it seems as if we ought to be wings level by now, but the gyro still shows turning. What's the standby gyro say? It's rolling, but it shows 20 more degrees to go until wings level. That can't be right. It's taking too much back pressure to hold the nose level.

Wait a minute, the VSI needle is diving and the standby gyro shows nose up. (By now I can see that the primary gyro is frozen and the standby gyro is badly lagging actual attitude if correct at all.) Look at that AOA! Get the power on! Altimeter's coming down and VSI's holding around 1,000 fpm descending. Turn needle . . . Where is it?! It's well right of center. Get that stick moving left. Not too fast —remember how the needle used to lag the angle of bank. Uh-oh, there's rudder shaker . . . and now we're in buffet. We'll eject at 600 feet.

The RIO's yelling now, "Easy with it!" I plug the burners . . . It works! The nose must be pitching up — altimeter's booming up, and the VSI's right behind. One, two, three thousand feet — we're through it on top and in the clear between layers. It's all over now, right?

Wrong! The radio comes to life (after what seems a long period of silence) — "DIAMONDBACK 107, what is your problem, sir?"

"Roger Approach, we've had a gyro failure."

"Roger sir, turn right zero-niner-zero, take angels 1.5"

By this time the gyros are back on the line, but we have no intention of "trying for two."

"Negative, Approach, we've had a gyro failure, we're going direct Langley."

"Roger 107, descend to 2,000 feet."

These guys obviously are not watching my lips — we'll squawk EMERGENCY, stay on top and proceed direct.

"Flash, let's get away from these guys — try to raise Norfolk Approach, and tune in Langley TACAN."

A few minutes is long enough to find out we have no DME (strange we didn't notice that before) and the overcast is still solid beneath us. We couldn't be too far away; let's put the needle a few degrees off the nose and see how fast it drops . . . "Flash, what luck with Approach?"

The needle is beginning to drop rapidly; we must be getting close . . . "There's a hole — isn't that the field below?" It is and we plunge through it. At 800 feet we're clear of clouds. The next order of business: identify ourselves to these somewhat surprised people in the tower. That done, we sigh with relief as asphalt meets the feet (the subsequent trip to the FAA rep for explanations notwithstanding).

We've made some mistakes; perhaps the most important was our failure to fully describe the gyro failure as an attitude indicator failure. But we've done some things right, too. We've survived one of those hairy situations aviators must encounter from time to time and we've done it on a memory of long ago, some 12 years from that Training Command turn-needle recovery training. That was in the old TF-9; the newer trainers have the AJB peanut gyro for partial-panel work.

They say memories can be worth their weight in gold. Here are two living and breathing aviators who know they can be worth their weight in life! ◄

Those Poor Devils

By Capt T. J. Gordon, USMC
HMM-764

BEING a crackerjack naval aviator in southern California has many distinct advantages: great flying, beautiful women, beaches and mountains to ski on — you know, all the *RIGHT STUFF*.

One day, I was complaining to a friend of the long drives to the Mammoth ski area (a six-hour drive to the central California Sierras), and he asked me if it were possible to fly a small group up there. I did have my ATP, and after all, I was going to be the first Marine helicopter pilot selected as the lead for the Blue Angels. I promptly said yes and went out to rent a six-passenger, turbo-charged, single-engine aircraft.

The flight up was quiet, fast and uneventful; the skiing

excellent. Due to the speed and convenience of the aircraft, we were allowed the luxury of skiing late on Sunday afternoon while the rest of the crowd drove home. After a nice, leisurely evening meal, we departed at approximately 8:30 p.m. — plenty of time to make it home in time for the 11:00 news. After leveloff, while cruising, I thought about those poor devils on the ground facing a six to seven hour drive back to Los Angeles. I wasn't worried, because I was at 17,000 feet, piloting an aircraft that would get us back in one hour and 45 minutes. Humming along at 195 knots, talking to Center and feeling quite smug, I knew that in a few minutes I'd make a heading change and the wind would be right on my tail. I cooly asked for FL 230, since the winds were better there and I'd then have a ground speed of over 240 knots. I fiddled around with the RNAV computer (you almost need a Ph.D. in trigonometry to figure the darn thing out), and whoa! What's happened to the autopilot? Why did it disengage? Panel lights dimming, "off" flags all over the panel, ammeter discharging and zap — a massive electrical failure!

Go through the procedures. Check and recycle the ammeter circuit breaker. Nothing. Check other circuit breakers and the overvoltage relay switch. All good, and still no juice. Only the battery bus and the flashlight to get us home. What now, Hot Dog?

Better let Center know what's happening. "Oakland Center, 76Q, impending electrical failure, will be maintaining VFR on top."

"Roger, 76Q, we just lost your transponder. Maintain V . . ."

Oh great! The radio is dead. Seventeen thousand feet, at night, above an overcast, over the mountains (a scant 40 miles north of Mount Whitney), pitch black with no electrical power. Better try to calm the fears of my five passengers, all non-fliers.

I tell them that this isn't all that serious (act calm and maybe they'll believe you!) Once clear of the mountains and this stratus layer, I'll descend; let's see, I need a transponder above 12,500. Just clearing the mountain range, I can make out the San Joaquin Valley ahead.

I'll go to 10,500. OK, figure out where we are. Let's see, we were northwest of the Porterville VORTAC. Yes, that looks like it could be Porterville below the clouds. Weather-guesser was right — the cloud decks and fog over the valley won't permit us to land safely down there. I secure what's left of the battery to use for an extreme situation. That flashlight's worth its weight in gold. I have my front seat passenger open the L.A. and San Francisco sectionals. Let's see, the airway's pretty much a straight shot. That heading should be good. Remember, the wet compass turns backwards. Check what gauges I have left: pitot-static, tach-generators and the attitude gyro (it's vacuum operated). I don't have any navigation/communications gear, turn needle, engine performance gauges or fuel gauges. All lights are gone, including strobes and anticollision. The landing gear will have to be pumped down. Better have the passengers look for traffic.

Five *very* eager sets of eyeballs call traffic *50* miles away. Let me see, FSS said the weather in the L.A. basin will be clear. I hope that's right. He also said Palm Springs was an alternate. Remember, aviate, navigate and communicate. Watch out, you meathead, check the heading and altitude —can't be sloppy with navigation! Keep your eyes out for landmarks.

Hey, it looks like Bakersfield under that cloud deck. I-5 should be there somewhere — there it is! Follow that baby, and all roads lead to Rome. Now I can see an aura of lights on the other side of the mountains. I doublecheck the chart to see that we have enough altitude to clear the granite. Bingo! L.A. is CAVU. I change my altitude to conform with the cruising rules and stay above the T.C.A. I concentrate on traffic and prepare to turn the battery and lights on at any second. There's Orange County Airport, MCAS Tustin and El Toro. It's all clear, so I pump down the gear and start the descent.

I turn the battery, lights and radio on. I make sure nobody's ILS inbound and make my radio call in the blind. It still looks clear. I doublecheck my gear down with the flashlight and then have one of the passengers keep the flashlight fixed on the airspeed indicator. I get the lineup, chop the power and flare. Safe on deck. It's now my turn to panic!

In retrospect, several things come to mind: First, be prepared for any contingency — how many times have we briefed some nugget or new copilot on the need to be ready — *are you?*

Second, practice. Emergency scenarios are much easier to deal with when we've been through them several times. When was the last time you practiced partial panel, lost comm or night navigation without navaids?

Third, redundancy. Uncle Sam usually does a pretty fair job of building naval aircraft with redundant systems, but what about redundant flight planning? The one item I wished I'd brought on my flight was a portable emergency radio along the line of our PRC-90.

Fourth, civil aircraft are not inherently dangerous. They are safe and can be fun, but they must be afforded the same respect a CH-46, P-3 or F-14 demands — different parameters to be sure, but exceed them and catastrophe is just as certain! ◄

The portable radio would have been nice, as would a Cyalume light stick (a cheap backup for a flashlight). A transponder is required to file above 12,500 feet, but once there with a bonafide emergency, it's not a primary consideration for an aircraft with authorization to deviate as necessary to remain VFR. Since the flight originated from a civil field (where many normal flight planning items are covered by telephone), was an area forecast overlooked? FAR requires that you land VFR as soon as practicable. Which was closer, the destination or alternate? Was fuel a consideration? When was the last time **you** *practiced partial panel? —Ed.*

NIGHT TANKING MIDAIR

By Richard A. Eldridge
APPROACH Writer

"AT 2030 we were standing outside the hangar, waiting to hotseat for a night tanking flight. The first guys were still airborne. Looking up, we saw the constellation of lights that their four-plane formation made with the tanker. It was so beautiful we went to the hangar balcony to get a better view. Then, about a minute later, we noticed a sudden flash followed by a pair of descending, spinning anti-smash lights on the right and a small descending flame to the left and below the flight. I watched the anti-collision lights resume what appeared to be controlled flight.

"Next, I noticed a large flash from the other flame. I followed that flash to the deck and noted the explosion as it hit. Someone asked, 'Did anyone see a chute?' No one did.

"I ran inside to call Base Ops. They said it was probably a flare, but they'd keep me informed. I told them it wasn't a flare because we were sure that the flight was ours and it had no flares onboard, but to keep us informed of their findings.

"We all stood around waiting for some information. About 20 minutes later, I saw a red penflare. Someone went to see if we could hear anything on our survival radios on Guard. We heard nothing but the beacon, however.

"I made another phone call to Base Ops to see what they knew. They knew nothing more."

What the four pilots had witnessed was indeed an A-7 midair during an aerial refueling training flight.

At the time of the mishap, the mishap pilots were flying their third flight of the day. They'd flown a bombing hop first, followed by a combination bombing and day aerial refueling training flight. (For the rest of the article, we'll refer to the two pilots involved in the midair as mishap pilots A and B.)

On the day refueling training flight, mishap pilot B was evaluated as spotting the basket and having too much closure. He was debriefed accordingly. Additionally, he was observed departing the day refueling formation in a non-standard, unbriefed manner. During the brief for the night refueling flight, specific procedures for rendezvous, aircraft movement in formation, aircraft lighting and voice procedures were discussed. There were five aircraft involved: the tanker (flight leader), the instructor (nicknamed "Coach"), mishap pilot A, mishap pilot B and a third pilot in training. All three pilots in training were replacement pilots.

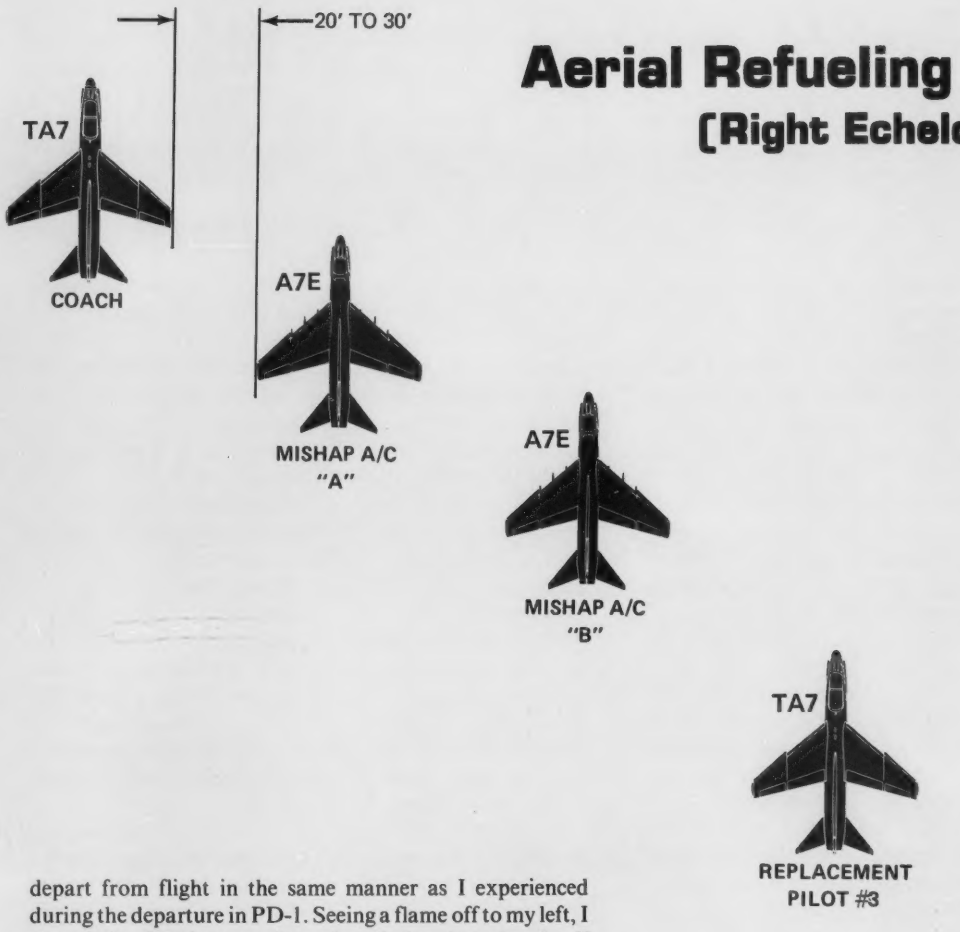
During the first part of the night tanking, the three pilots each received three night plugs from a left echelon formation. Following this, the formation was shifted to a right echelon from which additional plugs were to be made (see opposite page).

Despite prebriefed procedures on transitioning from the refueling position to right echelon, mishap pilot B thought he was to take position next to the Coach vice in proper sequence, following mishap pilot A. All aircraft had external lights on. In preparation for the first plug from right echelon, the Coach transmitted: "OK No. 1, put your probe out and it's your option, with or without the light, whatever you want."

Replacement pilot No. 3 observed movement between mishap pilots A and B, with the bottom of the fuselage of mishap aircraft A getting bright from the lights of mishap aircraft B. Twenty-two seconds after the Coach's transmission, RP No. 3 observed the midair collision and transmitted "Whoa, midair collision!"

Both aircraft fell away from the formation, with mishap aircraft A tumbling and B on fire.

Mishap Pilot A "The Coach said: 'It's your option to have the light on or not.' I said 'Roger.' Then I waited in position for a few seconds, because I hadn't yet been cleared to move. Immediately thereafter, I felt the aircraft move and roll uncontrollably. I felt bumping from the other aircraft from below. Now I was upside down, and I could see the other plane about two feet from my canopy. I felt my aircraft



Aerial Refueling Diagram
(Right Echelon)

17

depart from flight in the same manner as I experienced during the departure in PD-1. Seeing a flame off to my left, I thought it might be part of my aircraft. I took my hands off the controls, hit the AFCS paddle switch off and monitored my altitude. The aircraft stopped its gyrations in an extreme nosedown attitude. I started a normal recovery, checking all the engine instruments. The engine appeared to run normally; the flight characteristics seemed different, however. I regained sight of the flight and transmitted that I was OK."

Later, the Coach joined on him and assessed the damage to the aircraft. Although extensively damaged, once the A-7 was checked for slow flight characteristics at altitude, the pilot successfully made an arrested landing at home base.

Mishap Pilot B "I heard the Coach say: 'No. 1, you're cleared to put your probe out and come in with the light on

APPROACH diagram by Frank L. Smith

or off.' I saw No. 1 moving back, so I shifted my scan from flying formation on him to flying off the Coach. I'd been flying a bearing along No. 1's leading wing edge, and I was on the same bearing with the Coach. Then, No. 1 disappeared from my field of view. I began moving up and into the Coach to close the distance. I was moving up in a slightly acute position. I had a feeling of turbulence, immediately followed by the contact and a roll to the left with a slight pitchup.

"I knew there had been a collision, and I wanted to get away from the planes without further damage, so I relaxed my controls and the plane continued to roll nosedown to the left. Next, I got on the radios and said, 'This is No. 2, I think I'm OK.' I said this because I'd looked into the cockpit and seen that I was in a left-hand spiral. The left rudder pedal was depressed, so I centered the pedals and the plane straightened out nosedown passing 11,000 feet MSL.

"My scan shifted back outside. Not having seen any caution lights, I began to attempt recovery. The stick didn't move aft when pulled except for about one-quarter inch. I then tried pulling with both hands, but it still wouldn't move. I decided to get out, since I'd passed 11,000 MSL (7,000 AGL) earlier. I braced myself with my left hand and pulled the face curtain with my right hand. The ejection seat went as expected."

Later, the pilot was picked up by a civilian vehicle and transferred to the SAR helo when it arrived on scene. His injuries from the ejection were minor.

Analysis of the Mishap.

• *Tanking prodecure.* The tanking procedure was thoroughly briefed before the flight. When an aircraft was next to tank, the Coach would give the preparatory command: "Put your probe out." The pilot would extend the probe, put the probe light switch on or off as desired and retrim his aircraft. All moves would be called by the Coach, and only one aircraft would move at a time. After allowing time for the pilot to trim the aircraft, the Coach would transmit "Cleared into position." This would clear the pilot to move aft of the tanker basket in the ready position.

• *Cold medication.* Four days before the mishap, mishap pilot B went to the local dispensary to get treated for a cold. He was seen by a hospitalman apprentice (HA) who had limited experience and no aviation medical technician training. The pilot requested some medication that "wouldn't down me." (This terminology probably made no impact on the corpsman, since he was lacking in aviation experience.) When the corpsman failed to ask if he were a pilot, the pilot didn't bother to inform him that he was. The medication prescribed was *Actifed,* aspirin, fluids and rest. The corpsman's supervisor agreed with this prescribed medication for an upper respiratory infection.

Later, upon reviewing the HA's paperwork, the corpsman's supervisor realized that the subject was a flier and sent a grounding notice to the squadron, stating that the pilot was grounded for four days. He sent the notice via guard mail but failed to phone the squadron to ensure receipt.

Apparently the medication worked, as the pilot was feeling much better on the day of the mishap. He stated that he would have gone to sick bay for a down chit if he hadn't felt better on the day of the three scheduled flights. He knew he shouldn't take any medication on a flying day, so he didn't take any *Actifed* that morning. The instructors knew that he had gone to sick bay but figured he'd gotten a thumbs up, since there was no grounding chit. *The grounding chit was never received by the squadron.*

During the postejection examination, the examining flight surgeon stated that mishap pilot B had sufficient cold symptoms to warrant grounding.

• *Flight scheduling.* Because of the urgency to get the pilots qualified in tanking, the schedules officer was hard put to get the required flights completed in the time available. On the day of the mishap, the planned schedule for the two mishap pilots required 14 hours from first brief to the last land time. Squadron SOP stated: "When operationally feasible, the flying day will not exceed 12 hours." Because of this SOP deviation, fatigue was to be specifically addressed prior to the night tanking brief.

The schedules officer felt the deviation for the long flying day was warranted because no flights were scheduled for the two days prior to the long day, no new maneuvers or techniques were being introduced and the pilots were to be told specifically at the night brief that if they felt too tired to fly the hop, they were to cancel out. (One other pilot admitted to being too tired and did cancel his flight.) Neither mishap pilot admitted he was too tired to fly.

• *Misunderstanding procedures.* Although all pilots were thought to have understood the briefed tanking procedures, mishap pilot B stated that at impact he'd shifted his scan to the Coach's aircraft, was flying formation on the Coach, was closing the distance between them and was unaware that aircraft A was still between his aircraft and the Coach's. A review of the mishap flight tape confirmed that the briefed procedures were strictly adhered to and that the Coach didn't clear mishap pilot A to "take position on the tanker."

Although no specific item caused the entire mishap, the combined effects of fatigue, medication, cold symptoms and poor flight discipline resulted in mishap pilot B's inattention. He then misunderstood the call from the Coach to aircraft A and tried to move his aircraft into a position next to the Coach without ensuring that aircraft A had vacated the position.

What more can we say?

"All Aircraft in the Whidbey Pattern, This is Whidbey Tower, Change the Duty Runway from 24 to 25." ????

By CDR J. C. Erikson
VP-69

A RECENT NOTAM at NAS Whidbey Island caught my attention. It read, "Change designation of Runway 6/24 to Runway 7/25." As a Californian, my first reaction was that Whidbey had experienced an earthquake that I hadn't heard about. Further investigation showed that although it was the result of natural causes, it was a slower process and not due to catastrophic changes.

Most of us know that the one- or two-digit designation on the end of a runway represents the magnetic azimuth of the runway. That is, a bearing measured clockwise from magnetic north. A magnetic azimuth of 240 degrees would be represented by "24." However, "24" would represent all runway azimuths from 235.0 degrees through 244.9 degrees. Because our airborne heading systems have evolved from magnetic compasses, magnetic north is the reference from which we measure all headings and courses on aeronautical charts. All navigation aids (VOR, TACAN, ILS) use magnetic references. To correct to true north from the magnetic courses on the charts, apply the variation that is depicted as a dashed line. Hence, a final approach course of 250 degrees magnetic is equivalent to a true course of 229 degrees true with a local variation of 21 degrees West. Herein lies the real reason for the change in the runway designation.

True north is that direction from any point on the earth from the observer toward the northern pole of the axis of the Earth's rotation. Based on this true reference, there was no change in the heading of the runway. However, most small area maps that use magnetic information show not only the local variation at some point in time, but also the rate and direction of change of that variation. This is particularly true of charts that will not be updated for a year or more. The airport diagrams in the approach plates typically show the actual magnetic runway heading to a tenth of a degree. Additionally, the magnetic variation and the rate of change are depicted.

My interest in the NOTAM caused me to visit NAS Whidbey Operations, where Mr. Jim Hill, ATC Training Specialist, outlined the events preceding publication of the one-liner NOTAM.

Air Traffic Control must constantly update its maps to reflect course changes in relation to objects on the ground. The ground position must be plotted within 500 feet of the actual position. If there is an obstacle on the ground 10 miles from an airport, a one-half degree change in local variation will result in a **500-foot change** in the position of that point based on the original magnetic bearing. It was the ongoing process of updating these maps combined with the calibration of a newly-installed ASR-8 radar that showed the runway magnetic heading was now closer to 250 degrees than it was to 240 degrees. To verify these results, liaison was conducted with NOAA, Defense Mapping Agency in Boulder, Colorado and the Naval Flight Information Group in Washington, DC. NAS Whidbey Public Works provided maps depicting the true heading of the runways. The two mapping agencies then applied computer-generated variations and computed rates of change to derive the current magnetic headings of the runways.

Variation change is one of the reasons that instrument approaches must be reevaluated on a periodic basis. Navigation aids must be realigned to the current magnetic north, ground navigation checkpoints must be redone (including painting new signs for posting along taxiways), the compass rose must be recalibrated, approach plates must be updated, the airport diagram must be redone and the compatibility of airspace procedures must be reevaluated.

A very important part of aviation safety was summarized by that innocuous one-liner, "Change Designation of Runway 6/24 to Runway 7/25." ◄

Stung by the Stinger

By Russ Forbush
APPROACH Writer

Picture yourself in this situation, Mr. Tailhooker. You've just guided your aircraft in for a night CV landing and caught the No. 4 wire. You feel the reassuring tug of arrestment and turn off your external lights. Suddenly, there's no deceleration and you feel the aircraft's nose popping up. Your heart heads north as you realize your jet has shed the arresting gear. What's happened? What are you going to do?

RECENTLY, an F-14 aircrew was faced with just such a perilous situation. Let's pick up the action at the time of the *Tomcat's* turnaround inspection.

One and one-half hours before takeoff, a turnaround was conducted by the plane captain. Unfortunately, he failed to inspect the arresting gear assembly in accordance with existing directives.

Next, the aircrew preflighted their *Tomcat* but didn't check the arresting gear assembly because the aircraft was parked with its tail over the water. Before being taxied to the catapult, the F-14 was stopped and the arresting gear assembly was inspected by squadron personnel. This inspection, however, didn't include the trunnion, centering spring, lower attachment lug and metal stops.

The F-14 launch, mission and approach to a landing were normal. The *Tomcat* was flown to an on-speed, slightly-right-wing-down engagement of the No. 4 wire at an aircraft gross weight of 51,500 pounds. The LSO's comments were: "OK pass, a little high, come down to land, hook skip 3 to 4 wire."

The pilot selected military power, retracted speed brakes and, after feeling the normal recoil of arrestment, turned the external lights off. After 240 feet of runout (130 inches of ram travel on the No. 4 arresting gear engine, which translates to about 1.6 to 1.7 seconds), the tailhook and stinger assembly snapped off the F-14. The aircrew felt the sudden release from deceleration along with the nose of the aircraft "popping-up."

The pilot selected Zone 5 afterburner, and both the pilot and RIO noted airspeed to be between 80 and 100 KIAS. Subsequent conversations with arresting gear engineers revealed that actual airspeed at the time of tailhook/stinger separation was between 92 and 95 KIAS. This was computed using aircraft gross weight (51,500 pounds), wind over the deck (22 to 25 knots) and approach speed (132 KIAS).

The F-14 continued up the angle, became airborne, settled below the flight deck and climbed out following afterburner staging. Both crewmembers stated later that they thought they'd have to eject. The pilot said that after selecting afterburner, he had one hand on the control stick and the other on the lower ejection handle, while the RIO said he placed both hands on the lower ejection handle. As the *Tomcat* settled off the angle, the pilot scanned attitude at 10 degrees nose up and increased it to about 15 degrees. Angle of attack was between 15 and 20 units, with airspeed near 120 KIAS. The pilot then told his RIO over the hot mike, "120 knots," just as the afterburners completed staging. The *Tomcat* pitched up moderately (combination of Zone 5 and 8 to 10 degrees of noseup trim), but the pilot easily countered it with forward stick. Happily, he told the RIO, "I got it" about four to five times. After establishing a positive rate of climb, the pilot deselected afterburner and turned the external lights back on. The F-14 was then diverted to NAS Island, where a normal field landing was made.

The tailhook and damaged portions of the stinger were recovered in the landing area of the CV. A subsequent engineering analysis revealed evidence of stress corrosion cracking at the fracture origin, a 50 psi vice the required 1060 psi precharge on the arresting hook centering spring and indications that the stinger assembly failed when the lower attachment lug impacted the trunnion metal stop. The 50 psi precharge may have occurred after the tailhook separated from the aircraft.

There were personnel factors associated with the mishap. The plane captain and final checker failed to inspect the arresting gear assembly, and maintenance supervisors didn't

After 240 feet of runout, the tailhook and stinger assembly snapped off the F-14. The pilot selected Zone 5 afterburner . . .

ensure that the plane captain and troubleshooter were provided proper training to conduct inspections of the assembly. Stress corrosion on the lower attachment lug should have been detected when the aircraft was taxied forward and the tailhook was cycled prior to catapult launch.

The candid comments of the squadron CO regarding this mishap are quoted below:

"The cause factors were entirely within the responsibility of the reporting custodian. All of the appropriate MRC decks accurately reflected the requirements for inspection of the stinger and trunnion area. That this mishap occurred is irrefutable evidence that these inspections had not been properly conducted.

"All other squadron aircraft were inspected immediately following the mishap, and no other stinger or trunnion assemblies were rejected.

"As a direct result of this mishap, all plane captains, troubleshooters and aircrews have been given specific retraining in how to inspect these areas. Appropriate supervisors have also been given training. Additionally, the supervisory structure of the maintenance department has been reorganized, and certain key personnel have been replaced. I'm confident that these and all other inspections are now being properly conducted, and I'm thankful that the outstanding airmanship of the aircrew involved prevented the loss of the aircraft."

We wholeheartedly agree with this squadron CO that an aircraft and quite possibly an aircrew were saved because of the superb judgment demonstrated by the mishap crew. They were forced to make a quick decision on whether to eject or stay with the *Tomcat*. The coolness with which this decision was made is exemplary.

All aviation units should learn a valuable lesson from this mishap — don't wait for an emergency or a mishap to occur before looking into how your maintenance functions are being carried out. Check now and ensure that maintenance is being accomplished strictly by the book by people who are thoroughly trained to do their jobs. If you find deficiencies, get them corrected "pronto." The lives and aircraft saved could be in your unit! ◄

The aircraft rolled completely over and impacted the deck on its aft rotorhead. After sliding several feet toward the starboard catwalk with both rotor discs still turning, the aircraft finally came to rest in a semi-inverted position.

Chain lightning

By Russ Forbush
APPROACH Writer

IT doesn't happen often, but when it does, a tiedown chain disaster can strike like a bolt of lightning. Embarked helicopter crews learned this the hard way between 1 January 1980 and 31 December 1982, when eight mishaps were directly tied to chains. Four of those mishaps ruined the aircraft and cost the lives of two aircrewmen and an LSE. Let's climb up into PriFly and take a look at three of these four Class A mishaps.

While turning on LPH Spot 1 with chocks and chains in place, an H-46 HAC was watching another H-46 lift from Spot 2. Five seconds later, the HAC felt his own aircraft start a right roll that couldn't be controlled with full left cyclic and full down collective. The tiedown chains failed to hold, and the helo continued to roll until it left the flight deck, striking the side of the ship several times. At the time of the mishap, winds were 090 degrees relative at 14 knots. The ship had a two-degree starboard list and was taking

four-degree rolls. Eight-foot swells from 133 degrees port rolled in at seven-second intervals. The environmental factors of rotor wash, relative wind and ship list and roll contributed to the creation of sufficient right rolling moment to induce an uncontrollable rollover. The lack of adequate helo wind data for operations in a shipboard environment set the stage for this mishap.

The next mishap is somewhat similar in that it occurred onboard an LPH, environmental conditions played an important part, an H-46 was involved and tiedown chains were a factor.

A flight of two H-46s (Side Nos. 37 and 39) was recovering on Spots 2 and 3 of an LPH. Landing winds were five degrees port at 37 knots. Both helos were chained and chocked after landing. PriFly then cleared the bridge to make a starboard turn. During the turn, eyewitnesses noticed that both *Sea Knights* were "dancing" in the chocks. As the ship completed 45 degrees of turn, the CO observed the left mainmount of 37 rise from the deck. He immediately ordered rudder amidship and instructed PriFly to apply more tiedown chains. At the controls, the copilot of 37 sensed his aircraft's left mainmount lifting from the deck. He applied left cyclic and held the collective below the three-degree detent. The mainmount returned to the deck. At the same time the air boss broadcast an order over the LSE comm net and the 5MC for flight deck personnel to apply more chains to both turning aircraft.

The Spot 2 LSE quickly signaled his blue shirts to apply more chains to 37. Carrying tiedown chains, two blue shirts ran to the *Sea Knight*. One of them applied a single chain to the starboard stubwing tiedown point while the other secured a second chain to the nose strut. He then crossed under the H-46 to attach a second chain to the port mainmount. Before this could be accomplished, however, the ship's CO observed 37 back on deck in an apparently stable condition with the main landing gear struts unextended, so he ordered five degrees right rudder. Several witnesses later reported an increase in the roll of the ship to starboard and a change in wind direction and velocity.

As the ship continued into the turn, 37 again became unstable. The mainmounts came off the deck, the nose slid about two feet to the right and the aircraft lurched up, aft end first, breaking its mainmount chains. It continued up toward a dive-bombing nose-low attitude with its nose strut still attached to the flight deck by at least one chain. With the H-46 already well up in the air, the nose gear came off the deck. The aircraft continued to rise, yawed right and rolled about its nose. Rising still further, the forward rotor blades struck the deck some 32 feet forward of Spot 2 on an angle of 10 degrees to starboard. (At some point during this final sequence, the nose strut chain(s) broke loose.) The aircraft rolled completely over and impacted the deck on its aft rotorhead. After sliding several feet toward the starboard catwalk with both rotor discs still turning, the aircraft finally came to rest in a semi-inverted position. Once the motion ceased, the pilot secured the engine condition levers. All four crewmembers then egressed the H-46 through various exits in the cabin section. The total elapsed time of this crash sequence was less than five seconds.

During the crash sequence, the Spot 2 LSE ran toward the starboard catwalk, then tumbled out of control through the forward "bone" area (the parking area on the forward starboard side) aft of Spot 1. He fell overboard and was not recovered.

The most probable factors leading to this mishap were the

As full collective was applied, the H-2's nose pitched up sharply and the tail of the aircraft hit the flight deck. Immediately, flying debris filled the cockpit. With the aircraft nearing a vertical position, a loud popping sound was heard as the tail chain snapped loose from the H-2.

cumulative dynamic effects of excessive relative winds and the movement of the ship. These combined to create unsafe crossdeck wind vectors and velocities with vertical components at the port deck edge capable of producing the uncommanded liftoff and subsequent uncontrollable rollover. The situation was made worse by improper installation of the tiedown chains (the additional chain was incorrectly installed on the right stubwing tiedown point vice on the axle tiedown point).

Since this mishap occurred, revised wind limits have been established for H-46 shipboard operations.

We'll now review the third serious mishap involving tiedown chains. The aircraft was an SH-2F *Sea Sprite* and the mishap occurred aboard a Fast Frigate (FF).

At the time of the mishap, there were scattered showers in the area, making the FF deck wet but not slick. The SH-2F pilot in command (PIC) was flying in the right seat at the controls. Before the landing checklist was complete with wheel brakes properly set, he began a normal starboard-to-port approach to the deck lineup line. The tower reported winds of 320 degrees relative at 15 knots. Ship's pitch was two degrees, and rolls were three degrees. The H-2 was preparing to land for hot refueling.

The landing was normal in all respects. The main gear were sitting in the aft half of the touchdown circle, and the tailwheel was resting on the lineup line. Following touchdown, the copilot signaled for chocks and tiedown chains. Two tail chainmen, one on each side of the *Sea Sprite,* inserted main landing gear chocks and then went aft to attach tail chains. The starboard tail chain was applied immediately, but before the port tail chain was installed, the ship rolled port and the H-2 slid left and forward about three feet along the lineup line. This movement pulled the main landing gear tiedown shackles out of the chainmen's hands and displaced the chocks. The copilot notified the pilot that the H-2 was sliding. The PIC acknowledged.

At this point, the LSE crossed from the starboard to the port side of the ship to view the left side of the aircraft. The chocks were reset, and the deck crew again attempted to chain the mainmounts. No joy! Once again, the ship rolled to port and the H-2 slid an additional three to five feet port and forward along the lineup line. Again the shackles were pulled from the chainmen's hands. The copilot further advised the pilot that the aircraft was sliding toward the

The pilot heard the crewman repeating "We're going to crash" over the ICS as the tail of the H-2 struck the aft starboard corner of the flight deck and safety net before plunging into the sea.

hangar.

The pilot was now becoming apprehensive about this sliding movement. He checked the starboard mainmount for chain attachment, and noting none, he nodded to the LSE to indicate "lift" and applied collective. The H-2 lifted into a momentary three-foot stable hover, after which the nose yawed right and pitched up. This caused the pilot to lose visual reference with the ship. Realizing the starboard tail chain was attached to the aircraft, the pilot attempted to break the chain by adding power. The copilot then got on the controls with the pilot to help minimize control inputs.

As full collective was applied, the H-2's nose pitched up sharply and the tail of the aircraft hit the flight deck. Immediately, flying debris filled the cockpit. With the aircraft nearing a vertical position, a loud popping sound was heard as the tail chain snapped loose from the H-2. The pilot, now sensing an *extremis* situation, applied right cyclic to roll the aircraft over the starboard side and away from the ship. (He later stated that he took this action to prevent what he feared would be a catastrophic shipboard crash.) The pilot heard the crewman repeating "We're going to crash" over the ICS as the tail of the H-2 struck the aft starboard corner of the flight deck and safety net before plunging into the sea. The aircraft impacted the water nose high and tailfirst in a 90-degree angle of bank. The pilot and copilot freed themselves from the H-2 and were later picked up by a motor whaleboat. The crewman was lost at sea.

The four minor mishaps involving tiedown chains not described here had one thing in common — if the tiedown chains hadn't broken free from the helicopters or the flight decks and the pilots hadn't been able to gain or retain control of the helos, major damage and possible loss of life could have occurred.

As for the H-46 mishaps described above, **corrective action took place after the mishap, not before.** New shipboard wind limits were instituted but proved to be too high. When the second mishap occurred, even more restrictive H-46 wind limits were established.

As of this writing, there hasn't been a serious tiedown chain mishap in more than a year. All of you shipboard helicopter operators can extend this mishap-free period indefinitely by reviewing tiedown procedures for your model aircraft **right now.** If you don't, **chain lightning** may very well strike in the near future. ◄

Maj John Updyke
LT Don Perkins
VT-23

ASK Maj John "Tonto" Updyke the most important lesson he's learned in nearly two decades of flying and he'll probably tell you it's the fact that "there's no such thing as a routine flight." With two tours in Vietnam and over 3,000 hours in everything from US-2Bs to A-4Ms, Maj Updyke has experienced several heart-stopping emergencies but few more demanding than a recent noncombat mission over south Texas.

Major Updyke, the VT-23 maintenance officer, was the duty PMFC pilot when a T-2C was released for flight following nearly four months in the hangar. Like most "hangar queens," it had contributed greatly to the squadron supply effort.

Preflight, man-up and launch went without incident. The aircraft passed the boost-off rate-of-roll check, 400-knot acceleration check and clean stalls before Maj Updyke proceeded with the landing gear free-fall check. Unable to get down-and-locked indications by slowing to optimum AOA, he yawed the aircraft to the right while using cross-controls to maintain level flight.

Suddenly, his lateral control stick movement became restricted and the ailerons locked in the neutral position.

LT Don Perkins, Maj Updyke's copilot, tried to force the ailerons free from the rear cockpit. No joy. Maneuvering the aircraft with rudder and elevator alone, the crew decided to attempt a straight-in approach to home field. After a short brief of ejection procedures in the event of uncommanded roll, the crew descended out of 13,000 feet for the approach.

Fighting a 20-mph crosswind, Maj Updyke skillfully and cautiously maneuvered the crippled T-2 to touchdown at NAS Kingsville, completing another "nonroutine" flight. Postflight inspection revealed that the loss of aileron authority resulted from a missing aileron control lock assembly rod.

Knowledge of aircraft performance, superb airmanship and experience resulted in Maj Updyke's aircraft save. Just another outstanding job during a "nonroutine" flight.

Maj John Updyke (left), LT Don Perkins (right).

BRAVO ZULU

LCDR Kip Osborne
LT G. Paul Fredrickson
VR-58

DURING a scheduled C-9 flight from Tinker AFB to NAS Cecil Field at FL 330, LCDR Kip Osborne and LT G. Paul Fredrickson heard Ft. Worth Center ask for help in locating an aircraft in distress. Using his standby VHF radio, LCDR Osborne tuned in the emergency frequency and began to monitor the situation. The light civilian aircraft in distress was flying at 1,000 feet en route from Springfield, IL to Montgomery, AL. The pilot had become disoriented and was completely lost.

At this time the distressed aircraft was talking to a commercial aircraft on its way to Dallas. The commercial aircraft was attempting to help but had to break off in order to land in Dallas. LCDR Osborne took over from the commercial aircraft and began to work with the light aircraft. LT Fredrickson switched to ATC on UHF so LCDR Osborne could use both VHF comm radios to help the distressed pilot. Simultaneously, LCDR Osborne turned toward the distressed aircraft in order to maintain radio contact.

By now, the distressed pilot was becoming very anxious as he had to find a place to land before darkness closed in. Using one radio to talk to FSS Memphis and Little Rock and another radio to talk to the lost aircraft, LCDR Osborne asked questions of the lost pilot concerning the surrounding terrain and relayed the answers to the flight service stations. It was finally determined that the lost pilot was over a large nuclear power plant and a river. After relaying this to ground personel, it was possible to narrow his position to two places, one northwest of Little Rock, AR and one northwest of Memphis, TN. LCDR Osborne provided the lost pilot with navigational frequencies for both areas in an attempt to establish his position. Finally, the lost pilot was able to get good reception from the Gilmore VOR navigation frequency, northwest of Memphis. After getting the lost pilot's bearing off this station, LCDR Osborne gave him another VOR frequency and the lost pilot was able to get a bearing off the Jonesboro station. LCDR Osborne relayed this to Memphis FSS and through triangulation was able to determine the lost aircraft's position to be 60 nm northwest of Memphis. Using this information and a VFR Supplement, LCDR Osborne was able to vector the aircraft to Wynne Municipal Airport, west of Memphis, where the relieved pilot made a safe landing.

The adventure lasted just under one hour. It was a totally coordinated effort between Ft. Worth Air Traffic Control Center, Little Rock and Memphis Flight Service Stations and the C-9 crew. Because of their willingness to help a fellow aviator in distress, LCDR Osborne and LT Fredrickson have undoubtedly gained an avid supporter for naval aviation. ◄

LCDR Kip Osborne (left), LT G. Paul Fredrickson (right).

Blind Date

By LT Colin W. Sargent
APPROACH Editor

• IT'S dark outside, and you're flying a night surveillance approach in your A-7 *Corsair*. Thunderstorms and walls of rainshowers make you glad you filed an IFR flight plan. Overcast skies. Are you ever going to break into the clear? You can't wait to get a glimpse of those runway lights.

Slowly you descend through the goo. Occasionally the visibility extends to 1 nm. You were hoping to fly a GCA to a full stop, but the controller was unable to get a good enough return through the rainstorms. So now it's an air surveillance radar approach to RWY 27L.

No sweat.

You and KINGFISH 72 are right on airspeed and altitude.

And why not? In the last 3 weeks, you've logged 24.2 total hours, 4.7 night hours, 2.7 actual instrument hours, 18 precision approaches, three nonprecisions and two flight simulator hops. You're well rested and ready to WOXOFly and demonstrate your standard instrument credentials.

Approaching ASR minimums, you're unable to acquire the runway environment, so you execute a missed approach.

Something unusual is about to happen, so fly carefully. If you don't watch out, the future's going to open its mouth and try to swallow you.

You're still on instruments, and you can't see a thing. Then, magically, it happens: you break into the clear over the runway. Those beautiful lights. What a relief! Jumping on UHF, you report the immediate runway environment in sight and request permission to circle for a VFR approach.

(After all, a little VFR razzle dazzle is better than torturing yourself with another vertigo-inducing ASR in IMC, isn't it?)

Isn't it?

On paper, the weather's above circling minimums, so the Tower clears you for a visual approach, even though other pilots have been encountering transient zero-visibility conditions in fog, clouds and rainstorms over the aerodrome.

Here's a look inside the Tower immediately after you've been cleared to proceed visually at circling minimums:

0057:04	*Radar Supervisor*	(Intercom) OK, he's got the runway now, if you wanna come up on Button 8, take control, he's coming in.
0057:10	*Tower Supervisor*	OK, ah, KINGFISH 72, Tower's up, enter a left downwind for Runway 27 Left, keep it tight.
0057:13	*Radar Supervisor*	Ah, let me know when you've got him.
0057:15	*KINGFISH 72*	72.
0057:16	*Tower Supervisor*	(Intercom) I've got Button 8.
0057:17	*Radar Supervisor*	(Intercom) Roger.
0057:23	*Tower Supervisor*	KINGFISH 72, give me a tight downwind.
0057:26	*72*	72.
0057:39	*Tower Supervisor*	Ah, maintain VFR about the field.
0057:42	*72*	72.
0058:06	*Tower Supervisor*	KINGFISH 72, I've got GCA traffic about a mile and a half now for 27 Right.
0058:12	*Radar Supervisor*	(Intercom) OK, ah, status, did, ah, 71 get, ah, correction, did 72 get on deck?
0058:14	*Tower Supervisor*	(Intercom) I'm working it.
0058:15	*72*	72.
0058:16	*Radar Supervisor*	(Intercom) OK.
0058:18	*Tower Supervisor*	(Intercom) OK, make sure your guy doesn't go left of course, I've got contact on your guy.
0058:20	*Radar Supervisor*	(Intercom) Right.
0058:22	*Radar Supervisor*	(Intercom) He looks pretty steady on course.
0058:24	*Tower Supervisor*	(Intercom) All right, we've got it now.
0058:27	*Tower Supervisor*	OK 72, you're high, you're high, take it around.
0058:31	*Tower Supervisor*	KINGFISH 72, wave it off.
0058:32	*72*	72.
0058:33	*72*	Request on the right.

OK, your first "VFR" pass was too high (probably because you obeyed the controller's nonstandard command to "keep it tight"), so they waved you off. At that point, you asked for 27 Right instead of 27 Left because the "VFR" weather was more truly VFR over there (obviously, your first time around on 27 Left was a little scary, or you wouldn't have asked for a switch!)

A switch to a 27 Right is impossible, however, because the Tower is guiding another *Corsair* inbound on an ASR to that runway. Let's return to the Tower:

0058:36	*Tower Supervisor*	Cleared on the *left,* wave it off, wave it off, turn it out left immediately.
0058:38	*72*	72.
0058:42	*Tower Supervisor*	OK 72, left downwind, keep it low for Runway 27 Left.
0058:46	*72*	72.

Once again, the Tower has issued you a nonstandard command: "Keep it low." If you're worried about going IMC again, you could still request vectors and try another ASR, but you don't . . . Those VFR sirens are singing now, pulling you ever closer to the rocks.

Committed, you turn downwind toward the "VFR" hell of your own making while the Tower tries to sequence you with the ASR traffic:

0059:03	*Radar Supervisor*	(Intercom) and understand you've got 72 on Button 8 under your control.
0059:05	*Tower Supervisor*	(Intercom) Yea, I'm still working him, too, he almost, ah, smacked your, ah, guy as a matter of fact.
0059:08	*Radar Supervisor*	(Intercom) Good, good, good, OK.

0059:14	*Tower Supervisor*	OK, ah, KINGFISH 72, you gonna be able to keep the field in sight, sir?
0059:17	*Radar Supervisor*	(Intercom) OK, Jim.
0059:17	*72*	(Unintelligible-cut out by intercom)
0059:19	*Tower Supervisor*	(Intercom) Ah, don't call me, Bill, not till I call you.
0059:21	*Radar Supervisor*	(Intercom) I've got one on short final now.
0059:22	*Tower Supervisor*	(Intercom) OK, cleared to land and arrest 27 Right, where's he at?
0059:25	*Radar Supervisor*	(Intercom), OK, he's two and a half miles.
0059:27	*Tower Supervisor*	(Intercom) OK, don't clear him to land and arrest.
0059:30	*Radar Supervisor*	(Intercom) Understand *do not clear him.*
0059:33	*Tower Supervisor*	(Intercom) Continue.
0059:34	*Radar Supervisor*	(Intercom) Roger (unintelligible-cut out) 27 Right.
0059:36	*Tower Supervisor*	(Intercom) Yea, continue.
0059:39	*Tower Supervisor*	KINGFISH 72, again I've got GCA traffic at about two miles for 27 Right.
0059:43	*72*	72.
0059:48	*Tower Supervisor*	KINGFISH 72, you're cleared to land and arrest on Runway 27 Left, check gear and hook down, winds calm.
0059:54	*Radar Supervisor*	(Intercom) OK, I'm approaching a mile, do you want me to take that guy out for the right?
0059:58	*Tower Supervisor*	(Intercom) Take him out, take him out.
0059:59	*Radar Supervisor*	(Intercom) Roger.
0100:00	*Tower Supervisor*	(Intercom) OK, I think . . .
0100:01	*Tower Supervisor*	KINGFISH 72, Tower, how do you hear?

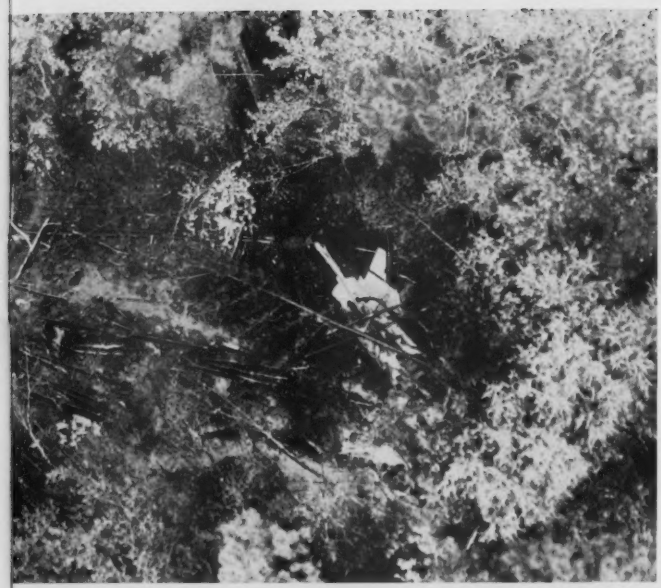
The Tower is asking you a question. Why can't you answer?

"KINGFISH 72, Tower, how do you hear?"

The reason you can't answer is that everything's gone black. Flying "VFR" in what must have been total IMC, you've hit a grove of slash pines while performing a 20- to 25-degree approach turn between the 90- and 45-degree positions. Disoriented since your turn from the 180, you've allowed a rate of descent in excess of 2,000 fpm to develop.

No ejection attempt, no transmission indicating any problems — you didn't even raise your voice. You never knew what hit you. Here's a final look at the Tower:

0100:02	*Tower Supervisor*	(Intercom) We had one go down, Chief.
0100:04	*Tower Supervisor*	KINGFISH 72, Tower, how do you hear?
0100:06	*Tower Supervisor*	(Intercom) OK, somebody just went down, call for SAR.
0100:09	*Tower Supervisor*	KINGFISH 72, Tower, how do you hear?
0100:13	*Tower Supervisor*	KINGFISH 72, Tower, how do you hear?
0100:15	*Tower Supervisor*	(Intercom), OK, supe, supe-KINGFISH 72 I believe just went down two miles east of the field.
0100:19	*Radar Supervisor*	(Intercom) Roger that, copy.
0100:21	*Tower Supervisor*	(Intercom) OK, Bingo everybody over to NAS Sprucetree, tell Chief Andrews.
0100:23	*Radar Supervisor*	(Intercom) Roger that, I copy.
0100:56	*Tower Supervisor*	(Intercom) OK, send everybody over to NAS Sprucetree that you can, let's get the SAR helo inbound.
0101:00	*Radar Supervisor*	(Intercom) Roger that.
0101:07	*Radar Supervisor*	(Intercom) Who did we have?
0101:09	*Tower Supervisor*	(Intercom) OK, I believe it was KINGFISH 72 on Button 8.
0101:12	*Radar Supervisor*	(Intercom) KINGFISH 72 on Button 8 that . . .
0101:22	*Radar Branch Manager*	(Intercom) Hey Jim.
0101:25	*Tower Supervisor*	(Intercom) Yea, go ahead.
0101:26	*Radar Branch Manager*	(Intercom) is 36 Right still a good deck?
0101:28	*Tower Supervisor*	(Intercom) Ah, I'd rather not bring anybody in, Chief, till we get this guy around, ah, why don't we go ahead and Bingo?
0101:33	*Radar Branch Manager*	(Intercom) Do we have, in, ah, in fact, have somebody down?



0101:35	*Tower Supervisor*	(Intercom) Yea, we do, I saw a fireball about a mile and a half east of the field, am almost positive it's KINGFISH 72.
0101:41	*Radar Branch Manager*	(Intercom) OK.

IMC is IMC is IMC. When you request a visual approach, you're *certifying* to the Tower that you have the immediate runway environment in sight. All the Tower can do is believe you!

It's time now for the mishap investigators and the second guesses. It's time for all pilots to mentally review the folly of trying to fly VFR in IMC. It's time to recommend that the local ATC facility review standard tower control procedures, voice calls, course rules and weather minimums.

It's time to wonder if you'd be alive right now if you'd executed a missed approach and stayed in the GCA pattern.

LETTERS

THE BLUE ANGELS
U. S. NAVY FLIGHT DEMONSTRATION SQUADRON
NAVAL AIR STATION
PENSACOLA, FLORIDA 32508

The Blue Angels Want You!

Pensacola, FL — The Blue Angels will be selecting two pilots and a flight leader this year for their 1984 team. Selections will be made in September 1983, but interested officers are encouraged to submit their applications as soon as possible.

Naval officers applying for demonstration pilot should be tactical jet pilots with 1,500 hours flight time and rolling to or on shore duty. Letters of application should be endorsed by commanding officers and forwarded to the Blue Angels with copies to the Chief of Naval Air Training and the Chief of Naval Personnel (Pers-433A).

Officers interested in the position of flight leader must have 3,500 hours flight time, be LCDRs or CDRs, be screened for aviation command and (preferably) have had command of a tactical jet squadron. Flight leader applicants should submit their letters directly to the Chief of Naval Air Training with information copies to the Commanding Officer, Blue Angels and the Chief of Naval Personnel (Pers-433A).

All letters of application should include each officer's experience and qualifications. Any further questions can be answered by calling the Blue Angels (autovon: 922-2584/2585, commercial: (904) 452-2583/2584) or corresponding with the Blue Angels, Naval Air Station, Pensacola, FL 32508.

An Apology to Nellis AFB Fighter Jocks

Norfolk, VA — I recently received a phone call from a "bunch of fighter jocks" at Nellis AFB questioning the identity of the unfortunate aircraft that's upside down in the water on our November '82 front cover. After conferring with another writer, who agreed with me that the mishap aircraft was an A-6, I relayed that information. Unfortunately, we were both too close to the forest to see the trees. We're embarrassed to confess that we were both dead wrong. The aircraft in question is definitely not an A-6 but indeed is an A-7.

So to the fighter jock who called and said there were "big bucks" riding on the answer, you may not have lost the bet after all. Take this apologetic response and use it as a reclama for what appeared to be a lost bet. In the future, we'll try to brush up on our recognition.

You may be interested to know that you weren't the only ones who questioned the identity of the aircraft. Hopefully, the answers supplied to the over 50 other callers weren't as far off target as I was.

R. A. "Chick" Eldridge
APPROACH Writer

It's an A-7.

Complete, Deep Stalls

Washington, DC — Your December '82 article by LCDR S. K. Gryde ("Icing, How Much is Too Much?") emphasized that "a heavy frost can typically increase stall speed 5 to 10 percent. Takeoff speeds are generally 5 to 25 percent above stall . . ." Lieutenant Commander Gryde also mentioned that "light turbulence, wind gusts or even a simple turn could produce a complete stall."

The situation can be worse than that. Ground-effect-augmented lift may help you get airborne while actually below stall speed. That apparently may have happened with the ice-laden, erroneously underpowered Boeing 737 that crashed 13 January 1982 upon takeoff from Washington National Airport.

Ronald S. Sheinson
Chemistry Division
Naval Research Laboratory

FLU-8P — Freshwater Activated, Too

Buffalo, NY — As manufacturers of the FLU-8/P (Automatic Life Vest Inflator), we have found your article, "Don't Get Pulled Under," in the January '83 issue very interesting. The CONAX Corporation and its employees take great pride in the manufacture of the FLU-8/P, and we find it very gratifying that we have played a role in increased survival.

However, I would like to point out a very important point about the FLU-8/P that may be misleading to your readers. The FLU-8/P is not only saltwater activated, but also freshwater activated. The unit is designed to activate at 67 micro mhos conductivity level, and as a comparison, fresh tap water in most areas has approximately 350 micro mhos conductivity.

S. J. Wojdan
CONAX Corporation

More Real Aviators

Washington, DC — Re: "Real Aviators Don't Read NATOPS" (January '83 *APPROACH*): damn right. *Real* aviators don't read anything without a centerfold.

Steve Thompson
Executive Editor
AOPA Pilot
(Aircraft Owners and Pilots Association)

• Glad you brought it up. In our June '83 issue, we will be featuring a 2-page centerfold poster so that even that "lost" two percent can take great pride in being both "real aviators" and unembarassed readers of *APPROACH*.

By the way, if anyone has some good poster suggestions for this program, please send them or call us at autovon 690-1321. Consider it a challenge!

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: *APPROACH* Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

IT'S EASY TO TURN

F OD

INTO

F D

CLEAN UP YOUR MESS!

Naval Safety Center
NAS Norfolk, Virginia

Poster idea contributed by LCDR Scott Vance and LT John Martin, VF-114

Your (his) eyes...

Your (his) mind...

Your (his) relative motion...

Sometimes you're not up there all alone.

Get the connection?

Naval Safety Center
NAS Norfolk, Virginia